Understanding the value of co-creation for social innovation interpretations of social innovation and co-creation in European policy-related documents between 1995 and 2018

Peter Meister Broekema, Lummina G. Horlings & Elisabeth Alice Maria Bulder

Routledge
Taylor & Francis Group

Check for updates

Understanding the value of co-creation for social innovation interpretations of social innovation and co-creation in European policy-related documents between 1995 and 2018

Peter Meister Broekema [ab*], Lummina G. Horlings [b] and Elisabeth Alice Maria Bulder[c]

ᵃResearch Centre for the Built Environment NoorderRuimte, Hanze University of Applied Sciences, Groningen, Netherlands; ᵇDepartment of Planning and Development at the Faculty of Spatial Sciences, University of Groningen, Groningen, Netherlands; ᶜDepartment of Business Management and Research Centre for the Built Environment NoorderRuimte, Hanze University of Applied Sciences, Groningen, Netherlands

Social innovation and co-creation have been discussed in academic literature for the last twenty years. However, the interrelatedness and application of these concepts in European Union policy deserves more attention. In our study, we focus on this relationship and application, by analysing the value of co-creation for social innovation. By analysing a large EU dataset, we showed that social innovation and co-creation were used more and more widely and that their use took off after 2010 and 2015 respectively. By applying a contextual analysis, we also revealed that both concepts became connected in EU policy on research and innovation. Our analysis also shows that co-creation became an indicator for successful social innovation in the Horizon Europe Framework programme. These results show the importance of co-creation in policies, but because the concept has not been defined properly, this carries the risk of simplifying co-creation into a box-ticking exercise.

Keywords: social innovation; co-creation; societal impact; European Union; EU policy

1. Introduction

Recently, there has been a growing interest in social innovation and co-creation in academia. A bibliometric analysis of academic publications showed that social innovation and co-creation have emerged in different scientific fields more or less simultaneously since the early 2000s (Ayob, Teasdale, and Fagan 2016; Greenhalgh et al. 2016). Besides academic interest, the use of social innovation and co-creation also proliferated in European Union (EU) policies after 2010. Although some researchers have discussed the relation between social innovation and co-creation (Greenhalgh et al. 2016), this relation deserves more attention.

Prior research has also been valuable for our understanding of social innovation and co-creation as a process, however the performative power of these concepts in a policy

landscape deserves more scholarly attention. Especially, because recent research on social problems is also suggesting that the socio-political context is influencing the formulation of these problems (Lawrence, Dover, and Gallagher 2014). This paper will break new ground by analysing the relationship between the concepts, their application and interrelatedness in EU policy and aims to provide more insight the value of co-creation for social innovation. The central research question in this paper will therefore be formulated as: "How is the potential of co-creation and social innovation presented and perceived in EU policy?"

In order to do so, more than 600,000 online available policy-related documents, received and produced by the European Parliament between 1995 and 2018, were used for data collection. The analysis is informed by different concepts from policy studies, such as policy cycle, political usability and policy paradigms. By applying these concepts to a large number of policy-related documents selected from this database, it became possible to address the underlying sub-questions:

(1) How did social innovation and co-creation develop over time in EU policy-related documents?
(2) How are co-creation and social innovation interlinked in EU policy?
(3) What are the underlying assumptions in EU policy-related documents on the relations between the concepts?

We will show how the interlinked use and implementation of these concepts not only informed the academic debate, but also increasingly informs EU policy. Our research shows the added value of the joint implementation of these concepts and illustrates how academic concepts diffuse into policies.

The paper starts with a brief theoretical overview of the use and definitions of our main concepts in the academic literature. Subsequently, this paper will describe the mixed methods used for the data collection. After addressing the sub research questions in the results section, the paper will end with a discussion before answering the main question in the conclusion.

With this paper we aim to contribute on a theoretical and methodological level to the field of social innovation and the field of co-creation research. Mainly, because the quantitative approach enables the analysis of both concepts and their application in EU policy over time. This analysis showed the relationship between social innovation and co-creation in different contexts. This approach contributes to a more fine-grained understanding of social innovation and co-creation and their relationship within policies. Therefore, the results of this research are important for scholars who work on the intersections between co-creation, social innovation and EU policy.

Our findings will also be relevant for policymakers, because the constellation of concepts used together, could evolve in a policy paradigm which could potentially become self-explaining and self-evident as a goal in itself.

2. Theoretical background

2.1. *Conceptualising social innovation and co-creation*

The first use of the concept of social innovation, although not explicitly mentioned, can be traced back to the end of the nineteenth century in the work of Gabriel Tarde. He focused more on bottom-up social change and a sociology of innovation, in contrast to Emile

Durkheim and Joseph Schumpeter (Howaldt, Kopp, and Schwarz 2016; Tarde 2012). However, throughout the twentieth century, social innovation was only used sparsely by scholars. There were also no clear patterns in the development of the concept before 1999 (Ayob, Teasdale, and Fagan 2016). Recently, bibliometric analysis combined with network analysis has shown that the use of social innovation steeply inclined after 2002 and is grounded in four distinct intellectual subfields that have been categorised after their main content (van der Have and Rubalcaba 2016). These subfields can be labelled as (1) community psychology; (2) creativity research; (3) social and societal challenges and (4) local development. According to the researchers referred to above, the third and fourth subfields have proven to be most influential and have contributed most to a more general understanding of social innovation. Within the fourth subfield is the work of Frank Moulaert influential. He analysed the concept of social innovation in numerous works and defined social innovation as a multidimensional concept that is aimed to satisfy human needs, change social relations and empower people (Moulaert et al. 2005). Bock added to the debate, arguing that most definitions of social innovation share commonalities such as (a) social mechanisms of innovations, (b) social responsibility of innovations and (c) the innovation of society (Bock 2012). In their recent work, Moulaert and MacCallum focused on a more detailed historical development of the concept of social innovation. Tracing back the concept to the eighteenth century, they showed that the concept has been used and valued differently in different contexts and that in the second half of the twentieth century two separate research streams emerged. These two streams interpret social innovation quite differently. The more Anglo-American stream focuses on entrepreneurship and the Euro-Canadian stream focuses more on the social economy. They also argued that the more entrepreneurial stream had an influence on for example EU policy and that this stream also became acquainted with austerity (Moulaert and MacCallum 2019). Work on the very nature of social problems is also showing the interconnectedness between these problems and the socio-political context (Lawrence, Dover, and Gallagher 2014). Recently, there has also been a growing interest in the transformative power of social innovation (Avelino et al. 2017).

In the last couple of years, we witness a shift towards social innovation as a process of innovation in the context of societal or social problems. An example can be found in the outputs and results of the EU-funded SI-Drive project. This project aimed to determine the nature, characteristics and impacts of social innovation, by mapping and analysing more than 1000 social innovation projects worldwide. The scholars in this project focused on the success and failure of social innovation projects and the implementation of these results in policy. Based on this comprehensive research, the SI-Drive project defined social innovation as:

[…] the invention, development and implementation of new ideas with the purpose to (immediately) relieve and (eventually) solve social problems, which are in the long run directed at the social inclusion of individuals, groups or communities (Oeij et al. 2018). This definition has also been mentioned by Moulaert and MacCallum as a definition that bridges between separate research streams and is focused on fundamental transformations of society instead of "band-aid" solutions for specific social problems (Moulaert and MacCallum 2019). The researchers from the SI-DRIVE project conclude that in all social innovation projects some form of co-creation plays a role and co-creation is a generic feature of social innovation (Oeij et al. 2018). The SI-Drive project thus explicitly links social innovation with co-creation.

The concept of co-creation was already introduced in the academic literature by Prahalad and Ramaswamy in 2000 (Prahalad and Ramaswamy 2000). After a few

modifications, the authors ultimately defined co-creation as *[…] the process by which products, services, and experiences are developed jointly by companies and their stakeholders* (Ramaswamy 2009). Within this context, co-creation has shown to be not only important in product innovation, but it has also improved customer satisfaction and has created new appreciations of value as well (Alves, Fernandes, and Raposo 2016). The concept has been interpreted differently in specific contexts and disciplines, such as business studies ("value co-creation"), design science ("experience-based co-design"), computer science ("technology co-design"), community development ("participatory research") (Greenhalgh et al. 2016) and spatial planning ("collaboration") (Soares da Silva and Horlings 2019). Co-creation has been used interchangeably in these disciplines with the term co-production.

The concept of co-production was already referred to by Whitaker (Whitaker 1980), and was further developed by Ostrom, who defined co-production as "[…] the process through which inputs used to produce a good or service are contributed by individuals who are not in the same organisation" (Ostrom 1996). Other scholars have elaborated on co-production since then (Albrechts 2013; Nesti 2018; Verschuere, Brandsen, and Pestoff 2012), arguing for its importance in the management of social change (Baker and Mehmood 2015), while geographers and spatial planners often refer to co-production as the collaboration between initiatives/cooperatives and governments shaping places (Meijer 2018).

The use of co-creation in the public sector became more frequent after 2010 (Voorberg, Bekkers, and Tummers 2015). However, the lack of a commonly accepted definition of co-creation within the public sector apparently blurs the objectives and outcomes of a co-creation process (Voorberg 2017). Some scholars suggest that the more people engage in the whole process of formulating challenges and overcoming them, the better their needs are being met ultimately (Martin 2010). In the light of our research, we also briefly like to introduce academic discussions on the concept of open innovation. The original idea was developed by Henry Chesbrough (Chesbrough 2003). Open Innovation describes a business model that utilises internal and external ideas to create value. *Research and Development* is treated as an open system and valuable ideas could also go the market from outside or inside the company (Chesbrough, Vanhaverbeke, and West 2006). A decade later, this concept was also used to analyse innovation in governments (Chesbrough and di Minin 2014) and was finally embraced by the European Union in their concept of Open Innovation 2.0 ('Open Innovation 2.0' 2013). In this definition, the EU focuses on innovation via co-creation with stakeholders in a so called quadruple helix setting, which has been derived from the work of Carayannis and Campbell (Carayannis and Campbell 2009).

Recently, co-creation has been redefined in the SISCODE project. This EU funded project intends to stimulate the use of co-creation in policy and analysed more than 100 different co-creation projects. Based on the findings of this analysis, they defined co-creation as

> […] a non-linear process that involves multiple actors and stakeholders in the ideation, implementation and assessment of products, services, policies and systems with the aim of improving their efficiency and effectiveness, and the satisfaction of those who take part in the process. ('SISCODE' 2019)

This definition distinguishes between internal actors and external stakeholders. Subsequently it points to different stages of development and distinguishes between products,

services, policies and systems,. Most importantly however, they also introduced satisfaction as a criterion for successful co-creation.

2.2.   *Understanding policies*

To understand the added value of co-creation for social innovation in EU policy, we will focus on the use, relations and meaning of concepts in policy-related documents over time. To understand these developments, we will first analyse the concept of public policy. One highly influential model of portraying public policy is the so-called policy cycle (Figure 1). This cyclic model captures the different stages of public policy.

During the agenda setting phase policymakers formulate challenges that need to be addressed, for example in a so-called green paper. Subsequently, public administrations examine various policy options in the policy formulation phase. This is followed by a phase of decision making in which the outline of a policy is being formulated. Subsequently an implementation phase takes place and via a policy evaluation phase the cycle comes back to the agenda setting phase. This model shows that in order to understand policies, it is essential to analyse how these policies were developed and which specific problems they sought to resolve in the first place. Therefore, we use this model to distinguish between types of documents within the policy cycle and will be able to contextualise the use of our two concepts throughout respective phases in the policy cycle.

Although policymakers increasingly base their policies on research findings, still a discrepancy exists between the use of concepts in the academic literature and their use in policy documents. Where the former is based on transparent analysis, the latter is much more based on the political usability of concepts by politicians (Daviter 2015).

However, policies sometimes end up being more than a response to specific problems and become performative in a so-called policy paradigm that could be defined as "[…] a framework that goes beyond the goals of a policy and the attained instruments of that policy, by specifying the very nature of the problems they are meant to be addressing" (Hall 1993).

A policy paradigm is powerful, because it impacts the policy actors' view of the world and acts as a lens through which policymakers view the world and is therefore essential in
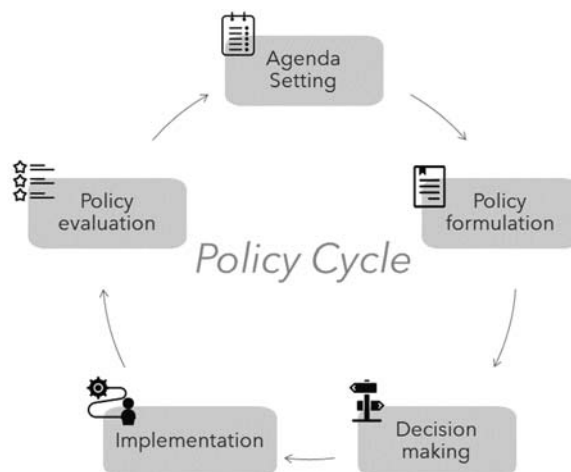

Figure 1.   Policy cycle (after Howlett et al., 1995).

identifying problems and relevant solutions (Carstensen 2015). This could imply that specific coherent combinations of concepts in a policy paradigm become self-explanatory and self-fulfilling, which means they need to be analysed carefully.

3.   Methodology

As argued above, policies are best understood if they are studied as an integral part of a policy cycle. Therefore, this paper analyses both concepts and their relationship during each stage of the policy cycle by looking at a wide variety of policy-related documents from the European Parliament's public register. This online database contains more than 600,000 policy-related documents produced or received by the European Parliament ('Document Search Page' n.d.). Unfortunately, this breadth also has a downside, because it encompasses documents that focus on all aspects of the European Union; from technicalities related to the implementation of EU law to questions from citizens received by the European Parliament. Therefore, a random sample of the whole database is not useful, because research shows that co-creation and social innovation are used in specific contexts.

Subsequently, to answer the first sub-question and explore how social innovation and co-creation has developed over time in EU policy-related documents, two single queries with "social innovation" and "co-creation" have been carried out on all available English documents from the public register with an end date of 31/12/2018. These queries provided insight into the frequency of the use of both concepts throughout the years. Secondly, after this more quantitative analysis, all the documents that contain "social innovation" or "co-creation" have been categorised thematically by year, using the topic filters set by the European Parliament. This categorisation provided insight into the use of both concepts in specific themes throughout the years.

As described above, in academic literature both concepts developed in different contexts and were more widely used in roughly the last decade. Our quantitative analysis and thematic categorisation of all policy-related documents corroborated this, and we were also able to distinguish between separate emergence and wider use phases for both concepts. To be able to analyse the relationship between social innovation and co-creation, we subsequently selected 50 documents using a stratified random sampling strategy that takes the use of the concepts in their emergence and take-off phase into account and also the use of both concepts in specific thematic contexts. We were looking for a cross section of all the documents, but keeping the model of the policy cycle in mind, we focused relatively more on documents in the emergence phase and on documents that included themes that were rapidly used more. This allowed us to study the emergence of both concepts in different contexts and their use throughout the policy cycle.

Following the selection of 50 policy documents, a first batch of 15 documents has been analysed using qualitative ATLAS.ti software. At first, these documents were coded *in vivo*, directly reflecting words and sentences from the documents. The codes were regrouped into concepts and finally categorisations in four subsequent steps. In the first step we recoded the *in-vivo* codes by summarising the text into a few words or themes. After this step, the codes were re-arranged alphabetically, to decontextualise them. In the next step, codes that emerged *invivo* more than once have been deleted or clustered into more general codes. In the final stage, these general codes were regrouped into so-called categorisations in a codebook (Figure 2) reflecting the *in-vivo* coding. This codebook has been validated by randomly testing the categorisations on three formerly coded documents. After the validation, the categorisations have been used to recode the

1	Beyond economy	9	Image of EU	17	Based on knowledge
2	Co-creation	10	Impact	18	Open innovation
3	Cohesion	11	Impact (dimensions)	19	Role of region
4	Cultural dimension	12	Inclusion of end users	20	Social dimensions
5	Demand-based approach	13	Inclusion of stakeholders	21	Social innovation
6	Dialogue	14	Innovation	22	Technology
7	Economy	15	Interactions	23	Value
8	Evaluation	16	Level of inclusion of stakeholders		

Figure 2. Codebook.

first batch of 15 documents and the remaining documents. This analysis showed how social innovation and co-creation developed over time in EU policy.

To answer the second sub-question, we analysed the co-occurrence of both concepts. Building on the queries that were carried out to answer the first sub-question, we described in which thematic topics or types of documents both concepts were mentioned and how the frequency of this co-occurrence changed over time. By analysing the topics where the concepts were mentioned, we were able to establish the context and internal coherence of the co-occurrence of the concepts.

To answer the third sub-question, we analysed the documents in which both concepts are used together more closely, by looking at the context of the documents, the changing meaning of social innovation and co-creation, and the relation between the two concepts. The analysis started with a fingerprint of the document, by highlighting the concepts that are mentioned more than average within a document. This gave an indication of the most important topics of the document.

After establishing this fingerprint, the documents have been compared by analysing the relative use of categorisations in all the documents. To improve the validity of the coding process, two documents that are nearly the same have been coded autonomously and have been compared. The comparison of both fingerprints showed that these two documents are nearly similar in regard to the more than average relative use of categorisations. Based on this, we concluded that our method is relatively robust, but differences in the frequency of the categorisations are inherent to the personal and subjective use of categorisations. However, this validity exercise corroborated our idea, derived from the model of policy paradigms, that it is essential to focus more on the internal relations

Research Question	Methodology	Data/sources
1) How did social innovation and co-creation develop over time in EU policy-related documents?	Quantitative analysis of occurence and use in specific themes	CORDIS database with more than 600,000 documents
2) How are co-creation and social innovation interlinked in EU policy?	Qualitatative analysis, with ATLAS.ti, in vivo coding and comparison	Stratified sample of 50 documents that contain social innovation and/or co-creation, from different phases and contexts
3) What are the underlying assumptions in EU policy-related documents on the relations between the concepts?	Qualitatative analysis, with ATLAS.ti, comparison of categorisations, using codebook	Sample of 5 documents that contain both social innovation and co-creation

Figure 3. Depiction of research methodology.

between the categorisations within a document than to look solely at differences in the use of categorisations between documents Figure 3.

To summarise, our combined internal and external qualitative analysis sheds a light on the underlying assumptions of the interrelationship between the two concepts. We conclude by answering the question what the perceived added value of co-creation for social innovation might be, based on our analysis.

4.   Results

While research on social innovation and co-creation has mostly focused on the conceptual development of one of these concepts in the academic literature(Ayob, Teasdale, and Fagan 2016; Greenhalgh et al. 2016) or the application of one of these concepts (Oeij et al. 2018; Voorberg 2017), we describe the emergence and use of both concepts and their interconnectedness in EU policy.

4.1.   *Quantitative analysis of the use of social innovation and co-creation*

An analysis of the use of the term "social innovation" in the European Parliament's public register revealed that a total of 2469 documents mention social innovation until the end of 2018. Our query revealed that the concept was used for the first time in a document that discusses the Green Paper on Innovation. This green paper discusses a shift from technological development towards a broader focus on innovation in the EU (European Commission 1995). After that, we see a gradual increase of references to social innovation in EU policy documents. In 2009, social innovation was used 24 times, but merely two years later it was mentioned more than 200 times. In 2018, the final year of the analysis in this paper, the concept was mentioned more than 400 times.

Co-creation has been mentioned in 339 documents until the end of 2018. The use of co-creation follows roughly the same pattern as the use of social innovation. The first use of the concept can be traced back to 1998 in a response to the Green Paper on the Convergence of the Telecommunications, Media and Information Technology Sectors, and the Implications for Regulation. This document discusses the future of these types of communications (European Commission 1997). In the response to this green paper, co-creation is only being mentioned once and is referring to a new approach that includes consumers. After this, co-creation is used only once or twice a year until 2011, is used around 10 times a year between 2012 and 2014 and, finally, its use rose from 49 to 116 times a year in EU policy-related documents between 2015 and 2018.

Hence, the use of the terms "social innovation" and "co-creation" proliferated from the first time these terms were mentioned until the end of 2018. Both follow a similar pattern: first mentioned in a response to a green paper, a typical agenda-setting document from the European Commission, both were used sparsely for a couple of years, and finally the use of both concepts rapidly increased in the last decade.

However, we have to acknowledge that absolute numbers show only a part of the story, as the total number of documents in the Public Register also rose sharply, especially after the enlargement of the European Union in 2004. Subsequently, we also analysed the relative use of both concepts. This analysis confirms the described pattern of an increasing occurrence of both concepts. Hence, based on the available data, we can distinguish a long "emergence phase" for "social innovation" from 1995 till 2009 and an even longer

one for "co-creation" between 1998 and 2014. During this phase the concepts were used sparsely. We could also distinguish a "take-off phase" where the concepts of "social innovation" and "co-creation" were used more intensively from respectively 2010 and 2015 onwards.

4.2. *Thematic quantitative analysis of the use of "social innovation" and "co-creation"*

Both concepts have also been used more widely in different contexts. Although not all documents in the public register have been tagged thematically by the European Union, they do provide insight into the different types of topics where both concepts are mentioned.

The 2469 documents containing "social innovation" between 1996 and 2018 were tagged 4181 times. A closer look at these tags reveals that "social innovation" emerged in documents that are tagged with "European Union" and "Social Questions". Until 2006, the concept started to be used more widely in documents tagged with "Economics", "Production, Technology and Research", and "Business and Communication". Between 2006 and 2010, the concept became connected with topics like "Law", "Geography", "Industry" and "International Relations". In 2011-2012, the years that showed a rapid rise in the use of the concept, "social innovation" also became connected with tags like "Trade", "Finance", "Environment", "Employment and Working Conditions" and "Politics". In 2013, the use of the concept reached a saturation point and it has not been used in new contexts in the analysed period.

However, if we focus on the topics that are used the most, we notice that the four tags "European Union", "Social Questions" "Economics", "Employment and Working Conditions" make up for more than 50% of all tags. Besides that, we also see that these tags were used from quite early on and that in almost every year of our analysis these four topics make up for more than 50% of the total tags of social innovation. This implies that during the emergence phase, social innovation was conceived as a socio-economic concept with EU-wide implications and although it has been used more widely over the years, it largely remained a concept that was used mostly in a socio-economic setting.

Co-creation is mentioned in 339 documents between 1998 and 2018 and these documents were tagged 278 times. Because of the smaller numbers, only two documents were tagged between 1998 and 2010, it is more difficult to draw conclusions on the emergence and wider use of "co-creation". However, the data shows a wider use of the concept over the years and it also shows that the concept is associated mostly with "Production, Technology and Research", "Education and Communications", "European Union" and to a slightly lesser extent also "Social Questions" and "Economics". However, the use of specific tags is less distinctive than with the use of "social innovation". For example, the use of tags varies more over the years and the topics mostly associated with co-creation change over the years. In line with the academic research mentioned above, the concept of co-creation was apparently defined in a production and technology setting, but was not as closely related to a specific topic as social innovation and emerged in different fields.

4.3. *Contextual analysis of social innovation and co-creation*

Both analyses showed that "social innovation" and "co-creation" were used more and more widely. However, in order to understand the way these concepts were used, a more in-depth analysis is essential. A first reading of the documents showed that both
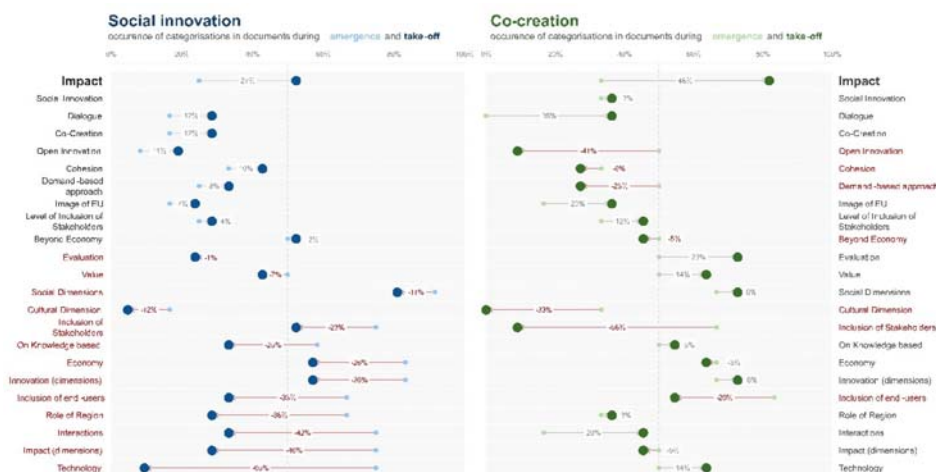
Figure 4.   Occurrence of categorisations in a sample of 50 EU policy-related documents that contain Social Innovation or Co-creation or both. In bold are the categorisations that are mentioned in at least half of the documents. The small dot represents the occurrence of categorisations during the emergence phase and the large dot during the take off phase. The percentage is showing the difference between the two phases.

concepts are used, but never defined. However, by selecting, coding and analysing 50 documents we were able to contextualise the use of "social innovation" and "co-creation" by looking at the co-occurrence of categorisations Figure 4.

Ten categorisations are mentioned in at least half of the total number of documents. However, if we take a closer look at the occurrence of these categorisations in the two emergence and two take-off phases of both concepts, we conclude that only the terms "social dimensions", "innovation" and "economy" are being used in at least half of the documents. The co-occurrence of the first two categorisations with "social innovation" in both the emergence and take-off phase may be explained by the fact that they are essentially components of the concept of social innovation. The co-occurrence with economy corroborates the findings from our previous analyses that both concepts are used mostly in a socio-economic setting.

During both their emergence phases, "social innovation" and "co-creation" also share the categorisations "inclusion of stakeholders" and "inclusion of end-users". However, during the emergence phase social innovation is being associated with five more categorisations and co-creation with none. Combined with our previous results, this implies that "social innovation" was a broader and more inclusive concept in the emergence phase than "co-creation". It also implies that co-creation did not have a very specific profile and was somehow overshadowed by the concept of social innovation. Probably because "social innovation" was mentioned for the first time in a highly influential green paper that set the agenda for a new, more inclusive, innovation policy, social innovation became part of a new vision in EU policy. "Co-creation" was used in a much more focused green paper and was not directly part of a new vision.

Interestingly, the take-off phases show the exact opposite. Based on the data, social innovation is mentioned in shorter and more specific documents such as answers to written questions and opinions. These documents are typically found further along the policy cycle. This moving along the policy cycle is also reflected in the type of

categorisations. For example, social innovation became more connected with "impact", which one would typically expect later in the policy cycle, and social innovation was, for example, less connected with the term "interactions". Both developments could indicate that social innovation has become more specified as a concept and that apparently "interactions" as a category was no longer part of this more solidified concept.

Our research further shows, that during the take-off phase, co-creation is mentioned with more categorisations such as "impact", "evaluation" and "value". As was argued above, these categorisations are part of documents that reflect a later phase in the policy cycle. Therefore, the use of these specific categorisations, the association with more categorisations for co-creation in relation with less categorisations for social innovation, and the rising association with for example interactions, imply that "co-creation" slowly started to become more independent as a concept in contrast to "social innovation".

4.4. *Co-occurrence of social innovation and co-creation in EU policy*

To understand the relation between both concepts we turned our attention to documents that mention both concepts. In our stratified strategic sample of 50 documents, there are five documents that mention both concepts Figure 5.

These documents are all related to the Framework Programmes on Research and Innovation, namely Horizon2020 and its successor Horizon Europe, and encompass the policy cycle, by first establishing and after that evaluating Horizon2020 and using these results for the formulation of the new Framework Programme. The documents share a number of

#	Year	Type	Short Description	#SI	#CC	Pages	Topics
1	2012	*Draft report*	Draft report on the proposal for a council decision establishing Horizon 2020	6	2	117	Business and Competition, Production, Technology and Research, International Relations
2	2017	*Study*	Horizon 2020 framework programme for research and innovation. European Implementation Assessment	4	1	296	Business and Competition, Production, Technology and Research, International Relations, Education and Communications, Law, Geography
3	2018	*Texts adopted (provisional edition)*	Adopted amendments by the European Parliament on the establishment of Horizon Europe	3	3	130	Business and Competition, Production, Technology and Research, International Relations, Politics, European Union, Employment and Working Conditions, Finance
4	2018	*Texts adopted (finalised edition)*	Adopted amendments by the European Parliament on the establishment of Horizon Europe	3	3	130	Business and Competition, Production, Technology and Research, International Relations, Politics, European Union, Employment and Working Conditions, Finance
5	2018	*Draft opinions*	Draft opinion on the proposal for a decision of the European Parliament and Council on establishing Horizon Europe	1	9	32	Production, Technology and Research, International Relations, Politics, economics, Social Questions, Education and Communications, Environment

Figure 5. Characteristics of five documents that mention social innovation and co-creation.

topics, which shows that they have a similar focus, such as business, production and international relations. However, apparently, the new Horizon Europe programme is associated with more topics, which could mean that the new programme on Research and Innovation will have an objective beyond research and innovation. Although both concepts are not mentioned often in the documents, it is clear that social innovation is mentioned less and co-creation is mentioned more, especially in the relatively short draft opinion on Horizon Europe.

4.5.   *Analysing underlying assumptions in EU policy*

The EU framework programmes are very large in budget and scope and our thematic analysis corroborated this by highlighting that these programmes have been tagged by the EU with a wide variety of thematic tags. Besides that, our qualitative data analysis also shows that these documents cover almost all the different categorisations.

Ten categorizations can be found in each document. These encompass, besides our two concepts, categorisations such as "beyond economy", "impact", "inclusion of end-users", "inclusion of stakeholders", "innovation", "based on knowledge", "social dimensions" and "value". Not surprisingly, there is a strong coherence in all the documents on the Framework Programmes, especially if we contrast this with our former analysis of all the 50 documents, where the coherence was much more opaque.

A more detailed analysis reveals that only the categorisations "based on knowledge" and "innovation" are used more than average in each document. This directly relates to the focus of these programmes on research and innovation. Categorisations such as "impact", "inclusion of end users", "social dimensions" and "social innovation" also score above average in four out of five documents. As showed in prior analyses, social innovation is often associated with social dimensions and the first two categorisations again emphasise the shift towards impact in these documents. Furthermore, the inclusion of
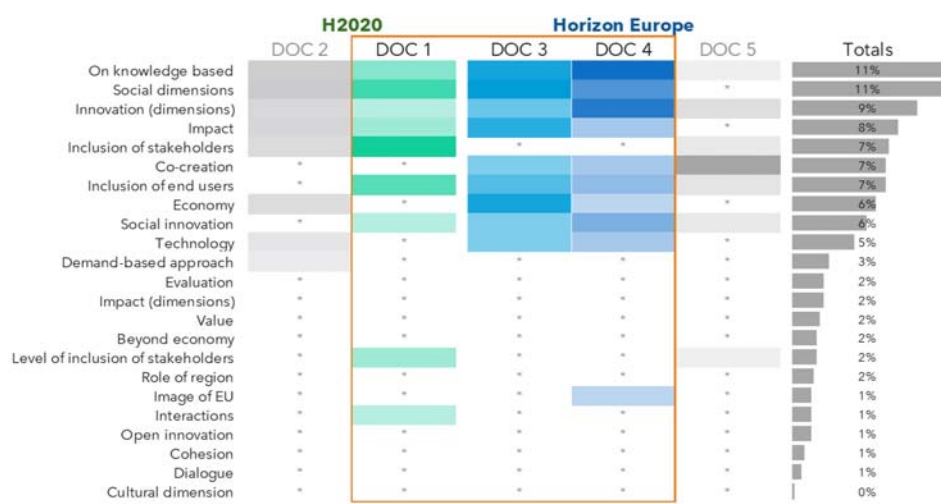

Figure 6.   Use of categorisations within the 5 documents that mention social innovation and co-creation. The coloured fields represent a 'more than average use' within the documents. The totals represent the total percentage of the use of the categorisation in all the documents.

stakeholders becomes more important in the upcoming Horizon Europe programme while this was historically more associated with definitions of co-creation Figure 6.

Apart from this relative analysis, co-creation is mentioned more over time as a category in the five policy documents. These findings suggest an increasing policy interest in the relation between innovation, research with impact and the necessity of co-creating knowledge with end-users and stakeholders.

To answer the third sub-question, that focuses on the underlying assumptions of both concepts, we analysed the five documents that both mention co-creation and social innovation in more detail by analysing the specific parts of these texts that have been categorised as "social innovation" and "co-creation".

Interestingly, social innovation and co-creation are never mentioned together in the five documents, but the most common categorisations that are linked to both of them are mentioned together. In line with our previous analysis they are mostly linked in parts of the documents that focus on impact.

The five documents are all part of a policy cycle related to research and innovation in the European Union. The first document reveals that during the establishment of Horizon 2020 around 2013, some explicit amendments by the European Parliament were made to include a social dimension of innovation. This evidences an increasing interest in the development of the concept of social innovation. Besides that, new evaluation criteria with social- and economic indicators were developed to be able to measure social dimensions. Interestingly, during this phase, co-creation was still solely used in relation to concepts such as inclusion and interdisciplinary research in contrast to the concept of co-development, that was used more in relation to enterprises.

The first years of Horizon2020 have been evaluated in 2017. This evaluation focused on the impact of the programme, that had ambitious objectives in the field of social innovation, and also looked at the developed criteria and the interplay between industry and academia. Interestingly, in this evaluation, social innovation and co-creation are not mentioned a lot throughout the text, but social innovation is explicitly mentioned in examples of societal challenges that have been included in the first years of the Horizon2020 programme. Co-creation is mentioned in relation to a dedicated programme that also aimed to tackle specific societal challenges. This shows that both concepts became more acquainted with impact and societal challenges.

In line with the ongoing character of policy cycles, the outcomes from the evaluation of Horizon2020 were also incorporated in the successive Horizon Europe Framework Programme. In the adapted amendments for Horizon Europe, social innovation and co-creation are more elaborated and become almost interlinked. Mainly because the programme aims to *[...] better align the process of research and innovation and its outcomes with the values, needs and expectations of European society.* In addition, co-creation is introduced as an indicator for short-term impact. This is strong evidence for an increasing interwovenness between societal impact and co-creation. This increasing interwovenness is also suggested in an amendment from the European Parliament, where they explicitly mention an involvement of citizens and civil society, instead of focusing only on public outreach activities, as suggested by the European Commission.

Hence, a closer analysis of five documents that mention both co-creation and social innovation reveals that both concepts became more interconnected in a policy that focused on research and innovation. Both concepts were part of a solid framework of ten categorisations throughout different types of policy documents, and even though the concepts as such are never mentioned together in the documents, they are both closely related to categorisations such as "impact" and ideas such as the inclusion of citizens in

research. However, more importantly, we were also able to trace the role of both concepts in these policies. During the Horizon2020 era, the concept of innovation became more layered and associated with social dimensions. Social innovation therefore functioned as a specification of the main concept of innovation. However, in the need for the evaluation of this social innovation, new indicators were gradually developed within subsequent documents that led to the formation of a new Framework Programme. Co-creation became one of these new indicators of societal impact and therefore changed from a descriptive concept into a prescriptive one.

6.   Discussion

Our analysis of more than 600,000 documents from the EU public register clearly shows that between 1995 and 2018, social innovation and co-creation emerged in different areas, were subsequently used more and more widely, and eventually became connected in an EU policy on Research and Innovation. Apparently, this is in line with academic literature on the emergence and changing definitions of social innovation and co-creation (Greenhalgh et al. 2016; van der Have and Rubalcaba 2016), and the use of the concepts in the public sector (Oeij et al. 2018; Voorberg, Bekkers, and Tummers 2015).

   To understand the relation between social innovation and co-creation, academic literature tends to focus on the changing definitions of these concepts over time. However, as noticed above, definitions of these concepts are mostly absent in policy documents. Therefore, to understand changes in a large set of "raw" policy documents that are ultimately focused on addressing challenges and not so much on defining concepts, we first explored the concept, meaning and implementation of policies by introducing concepts such as policy cycle, political usability and policy paradigm.

   By applying the concept of policy cycle to a large dataset, we were able to track the journey of social innovation and co-creation through the different phases of the policy cycle. On a superficial level, the journeys appear to be quite similar but a few years apart. Both concepts emerged respectively in 1995 and 1998 in documents closely related to the agenda setting phase and were subsequently used more widely in similar policy-formulating, decision-making, implementing and evaluating documents. Both social innovation and co-creation also have a clear emergence phase and a take-off phase that started roughly 15 years after the first emergence of the concepts and finally became connected in the Framework Programmes on Research and Innovation.

   However, our analysis also showed that both concepts emerged in different contexts and were perceived quite differently. Social innovation was part of a new key concept within the EU and became used very widely, but because of that also lost some of its meaning. Co-creation however, was originally introduced as an example to include end-users in a process, but became connected with normative categorisations such as impact, evaluation and value and therefore politically more usable (Daviter 2015).

   We also noted in our analyses that social innovation and co-creation are both mentioned in two Framework Programmes on Research and Innovation (Horizon 2020 and Horizon Europe) and became associated with specific concepts, such as impact or inclusion of end users. On a superficial level, this cluster of associated concepts that have a specific objective (impact) and specific means (co-creation with end users) shows similarities with the concept of "policy paradigm" that has recently been redefined as

   […] a set of coherent cognitive and normative ideas intersubjectively held by people in a given policy community about the nature of reality, social justice and the appropriate role

of the state, the problem that requires public intervention, policy ends and objectives that should be pursued, and appropriate policy "means" to achieve those ends. (Daigneault 2015)

Although Daigneault explicitly states that a strict distinction must be kept between policies and policy paradigms, the data from our extensive policy analysis suggests that from 2017, a new policy paradigm might be developing, in which social innovation, co-creation and impact are combined into a coherent set of ideas.

Our analyses showed that social innovation and co-creation became connected via the concept of impact, assumedly around the time the Horizon2020 programme was evaluated for the first time. Because this evaluation made it clear that it was difficult to track the desired progress in overcoming societal challenges, it became essential to first define progress with the concept of impact. This impact became the objective of social innovation, that previously was more defined in terms of societal challenges. However, to be able to track this progress, indicators such as the increasingly normative and positive concept of co-creation were explicitly mentioned when the Horizon Europe programme was established.

This specific constellation of social innovation, co-creation and impact appears to be ideational and normative, pertains to dimensions on the level of the addressed problem (social innovation that is closely related with societal challenges), the objective of overcoming these societal challenges (via impact) and appropriate means to achieve this objective (by co-creation).

Although a more detailed and longitudinal analysis would provide more in-depth insights, our results already suggest that these three concepts complement and constitute each other and might become performative in an emerging policy paradigm. This could lead to a situation in which co-creation no longer adds value to the concept of social innovation, but is being reduced to an indicator that neglects the quality of the process of social innovation as such.

7.   Conclusion

In this paper we explored the potential of co-creation for social innovation in EU policy, by answering three sub research questions on the use, interrelatedness and underlying assumptions of these concepts in EU policy documents. By carefully analysing a large online dataset and looking closely at a sample of 50 documents we showed that both concepts were used more, in more different contexts and became connected by meaning in Horizon 2020.

By interpreting these results in the light of the concept of policy paradigm, we were also able to show that social innovation and co-creation in combination with impact might qualify as an emerging policy paradigm. We also showed that the interrelatedness of these concepts could be characterised as performative in policies on research and innovation, because they almost create phenomena they are describing. This could potentially hamper innovation, because the focus is more on the description of a process instead of the newness as such.

We found that co-creation played an increasingly important role in Horizon2020 as the necessary link between social innovation and impact and trickled down in the establishment of the large framework programmes on research and innovation. Originally introduced and used as an example of a process to include end-users, it transformed into an indicator for societal impact and a critical criterion for successful social innovation. Because of this, co-creation has become more or less incorporated into social innovation

as a means, and has restored this eroded or too-widely-used concept to its original meaning in connection with overcoming societal challenges and having an impact. However, because co-creation has become an indicator for social innovation and is part of an emerging policy paradigm that attaches meaning to reality in terms of co-creation, impact and social innovation, there is a risk that co-creation becomes self-explaining and self-fulfilling and will lose its meaning eventually. Therefore, we suggest that the concepts of social innovation and co-creation need to be operationalised more in EU policy. This will ensure more focus and subsequently a better use of both concepts. Besides that, we also recommend to evaluate the actual activities of co-creation as an indicator for good co-creation and subsequently social innovation.

Future research could focus on investigating how this policy paradigm around co-creation, social innovation and impact develops over time and analyse the influence of co-creation on policies and the implication of these policies on for example funded projects. To conclude, we also believe that our suggestions could be implemented in new EU policies. This will enhance future policies and stimulate new forms of social innovation *and* co-creation.

Disclosure statement

No potential conflict of interest was reported by the author(s).

ORCID

Peter Meister Broekema http://orcid.org/0000-0002-7926-4118
Lummina G. Horlings http://orcid.org/0000-0002-8690-7986

References

Albrechts, Louis. 2013. "Reframing Strategic Spatial Planning by Using a Coproduction Perspective." https://journals.sagepub.com/doi/10.1177/1473095212452722.

Alves, Helena, Cristina Fernandes, and Mário Raposo. 2016. "Value Co-Creation: Concept and Contexts of Application and Study." *Journal of Business Research, Designing Implementable Innovative Realities* 69 (5): 1626–1633. doi:10.1016/j.jbusres.2015.10.029.

Avelino, Flor, Julia Wittmayer, René Kemp, and Alex Haxeltine. 2017. "Game-Changers and Transformative Social Innovation." *Ecology and Society* 22 (4), doi:10.5751/ES-09897-220441.

Ayob, Noorseha, Simon Teasdale, and Kylie Fagan. 2016. "How Social Innovation "Came to Be": Tracing the Evolution of a Contested Concept." *Journal of Social Policy* 45 (4): 635–653.

Baker, Susan, and Abid Mehmood. 2015. "Social Innovation and the Governance of Sustainable Places." *Local Environment* 20 (3): 321–334. doi:10.1080/13549839.2013.842964.

Bock, Bettina. 2012. "Social Innovation and Sustainability; How to Disentangle the Buzzword and Its Application in the Field of Agriculture and Rural Development." *Studies in Agricultural Economics* 114 (2): 57–63. doi:10.7896/j.1209.

Carayannis, Elias G., and David FJ Campbell. 2009. ""Mode 3'and'Quadruple Helix": Toward a 21st Century Fractal Innovation Ecosystem'." *International Journal of Technology Management* 46 (3–4): 201–234.

Carstensen, Martin B. 2015. "Bringing Ideational Power Into the Paradigm Approach: Critical Perspectives on Policy Paradigms in Theory and Practice." In *Policy Paradigms in Theory*

and Practice: Discourses, Ideas and Anomalies in Public Policy Dynamics, edited by John Hogan, and Michael Howlett, 295–318. Studies in the Political Economy of Public Policy. London: Palgrave Macmillan UK. doi:10.1057/9781137434043_14.

Chesbrough, Henry. 2003. *Open Innovation: The New Imperative for Creating and Profiting from technology*. Harvard Business School Publishing Corporation. Boston.

Chesbrough, Henry, and Alberto di Minin. 2014. "Open Social Innovation." In *New Frontiers in Open Innovation* edited by Henry Chesbrough, Wim Vanhaverbeke and Joel West, 169-190. Oxford University Press. Oxford.

Chesbrough, Henry, Wim Vanhaverbeke, and Joel West. 2006. *Open Innovation: Researching a New Paradigm*. Oxford University Press. Oxford.

Daigneault, Pierre-Marc. 2015. "Can You Recognize a Paradigm When You See One? Defining and Measuring Paradigm Shift." In *Policy Paradigms in Theory and Practice: Discourses, Ideas and Anomalies in Public Policy Dynamics*, edited by John Hogan, and Michael Howlett, 43–60. Studies in the Political Economy of Public Policy. London: Palgrave Macmillan UK. doi:10.1057/9781137434043_3.

Daviter, Falk. 2015. "The Political Use of Knowledge in the Policy Process." *Policy Sciences* 48 (4): 491–505. doi:10.1007/s11077-015-9232-y.

'Document Search Page'. n.d. Accessed June 9, 2020. https://www.europarl.europa.eu/RegistreWeb/search/simpleSearchHome.htm?searchLanguages=EN&sortAndOrder=DATE_DOCU_DESC.

European Commission. 1995. *Green Paper on Innovation*. Office for Official Publications of the European Communities. Brussels.

European Commission. 1997. 'Green Paper on the Convergence of the Telecommunications, Media and Information Technology Sectors, and the Implications for Regulation - Towards an Information Society Approach'. Text. Shaping Europe's Digital Future - European Commission. 3 December 1997. https://ec.europa.eu/digital-single-market/en/news/green-paper-convergence-telecommunications-media-and-information-technology-sectors-and.

Greenhalgh, Trisha, Claire Jackson, Sara Shaw, and Tina Janamian. 2016. "Achieving Research Impact Through Co-Creation in Community-Based Health Services: Literature Review and Case Study: Achieving Research Impact Through Co-Creation." *The Milbank Quarterly* 94 (2): 392–429. doi:10.1111/1468-0009.12197.

Hall, Peter A. 1993. "Policy Paradigms, Social Learning, and the State: The Case of Economic Policymaking in Britain." *Comparative Politics* 25 (3): 275–296. doi:10.2307/422246.

Howaldt, Juergen, Ralf Kopp, and Michael Schwarz. 2016. 'Social Innovations as Drivers of Social Change – Tarde's Disregarded Contribution to Social Innovation Theory Building', 15. https://doi.org/10.1057/9781137506801_2.

Lawrence, Thomas B., Graham Dover, and Bryan Gallagher. 2014. 'Managing Social Innovation'. The Oxford Handbook of Innovation Management. 1 January 2014. https://doi.org/10.1093/oxfordhb/9780199694945.013.032.

Martin, Steve. 2010. "Co-Production of Social Research: Strategies for Engaged Scholarship." *Public Money & Management* 30 (4): 211–218. doi:10.1080/09540962.2010.492180.

Meijer, Marlies. 2018. 'Community-Led, Government-Fed and Informal', 195. https://repository.ubn.ru.nl/handle/2066/183214.

Moulaert, Frank, and Diana MacCallum. 2019. *Advanced Introduction to Social Innovation*. Edward Elgar Publishing. Cheltenham.

Moulaert, Frank, Flavia Martinelli, Erik Swyngedouw, and Sara Gonzalez. 2005. "Towards Alternative Model(s) of Local Innovation." *Urban Studies* 42 (11): 1969–1990. doi:10.1080/00420980500279893.

Nesti, Giorgia. 2018. "Co-Production for Innovation: The Urban Living Lab Experience." *Policy and Society* 37 (3): 310–325. doi:10.1080/14494035.2017.1374692.

Oeij, P. R. A., W. van der Torre, S. Vaas, and S. Dhondt. 2018. 'Understanding Social Innovation as an Innovation Process'. TNO. /report-completed-understanding-social-innovation-as-an-innovation-process/.

'Open Innovation 2.0'. 2013. Text. Shaping Europe's Digital Future - European Commission. 4 December 2013. https://ec.europa.eu/digital-single-market/en/open-innovation-20.

Ostrom, Elinor. 1996. "Crossing the Great Divide: Coproduction, Synergy, and Development." *World Development* 24 (6): 1073–1087. doi:10.1016/0305-750X(96)00023-X.

Prahalad, C. K., and V. Ramaswamy. 2000. "Co-Opting Customer Competence." *Harvard Business Review* 78 (1): 79–90.

Ramaswamy, Venkat. 2009. "Co-Creation of Value — Towards an Expanded Paradigm of Value Creation." *Marketing Review St. Gallen* 26 (6): 11–17. doi:10.1007/s11621-009-0085-7.

'SISCODE'. 2019. https://siscodeproject.eu/.

Soares da Silva, Diogo, and Lummina G. Horlings. 2019. "The Role of Local Energy Initiatives in Co-Producing Sustainable Places." *Sustainability Science* 15 (2): 363–377. doi:10.1007/s11625-019-00762-0.

Tarde, G. 2012. *Social Laws - An Outline of Sociology.* Redditch: Read Books Ltd.

van der Have, Robert P, and Luis Rubalcaba. 2016. ". 'Social Innovation Research: An Emerging Area of Innovation Studies?" ' *Research Policy* 45 (9): 1923–1935.

Verschuere, Bram, Taco Brandsen, and Victor Pestoff. 2012. "Co-Production: The State of the Art in Research and the Future Agenda." *VOLUNTAS: International Journal of Voluntary and Nonprofit Organizations* 23 (4): 1083–1101. doi:10.1007/s11266-012-9307-8.

Voorberg, W. H. 2017. 'Co-Creation and Co-Production as a Strategy for Public Service Innovation: A Study to Their Appropriateness in a Public Sector Context'. https://epubs.ogc.nl/?epub=w.voorberg.

Voorberg, W. H., V. J. J. M. Bekkers, and L. G. Tummers. 2015. "A Systematic Review of Co-Creation and Co-Production: Embarking on the Social Innovation Journey." *Public Management Review* 17 (9): 1333–1357. doi:10.1080/14719037.2014.930505.

Whitaker, Gordon P. 1980. "Coproduction: Citizen Participation in Service Delivery." *Public Administration Review* 40 (3): 240–246. doi:10.2307/975377.